ELSEVIER

Artificial Intelligence 142 (2002) 287

Artificial Intelligence

www.elsevier.com/locate/artint

Forthcoming Papers

M. Deneker, V.W. Marek and M. Truszczyński, Uniform semantic treatment of default and autoepistemic logics

We revisit the issue of epistemological and semantic foundations for autoepistemic and default logics, two leading formalisms in nonmonotonic reasoning. We develop a general semantic approach to autoepistemic and default logics that is based on the notion of a *belief pair* and that exploits the lattice structure of the collection of all belief pairs. For each logic, we introduce a monotone operator on the lattice of belief pairs. We then show that a whole *family* of semantics can be defined in a systematic and principled way in terms of fixpoints of this operator (or as fixpoints of certain closely related operators). Our approach elucidates fundamental constructive principles in which agents form their belief sets, and leads to approximation semantics for autoepistemic and default logics. It also allows us to establish a precise one-to-one correspondence between the family of semantics for default logic and the family of semantics for autoepistemic logic. The correspondence exploits the modal interpretation of a default proposed by Konolige. Our results establish conclusively that default logic can be viewed as a fragment of autoepistemic logic, a result that has been long anticipated. At the same time, they explain the source of the difficulty to formally relate the semantics of default extensions by Reiter and autoepistemic expansions by Moore. These two semantics occupy *different* locations in the corresponding families of semantics for default and autoepistemic logics.

Z.-H. Three perspectives of data mining (Book Review)

This paper reviews three recent books on data mining written from three different perspectives, i.e., databases, machine learning, and statistics. Although the exploration in this paper is suggestive instead of conclusive, it reveals that besides some common properties, different perspectives lay strong emphases on different aspects of data mining. The emphasis of the database perspective is on *efficiency* because this perspective strongly concerns the whole discovery process and huge data volume. The emphasis of the machine learning perspective is on *effectiveness* because this perspective is heavily attracted by substantive heuristics working well in data analysis although they may not always be useful. As for the statistics perspective, its emphasis is on *validity* because this perspective cares much for mathematical soundness behind mining methods.

0004-3702/2002 Published by Elsevier Science B.V.
PII: S0004-3702(02)00352-1